

**STATE BOARD COMPREHENSIVE OPERATIONS PLAN AND MONITORING SPECIAL STUDY**  
**Technical Workgroup Meeting #3 – Salinity Point Source Sampling & Increased Ion Sampling**  
**Meeting Notes**  
**July 19, 2021**  
**2:00 p.m. – 3:30 p.m.**

**Attendees**

- Benjamin Abban/USBR
- Ibraheem Alsufi/DWR
- Erin Andrews/DWR
- David Colvin/DWR
- Logan Davis/DWR
- Daniel Deeds/USBR
- Erin Foresman/State Water Resources Control Board (SWRCB)
- Jared Frantzich/DWR North Central Region Office
- Bryant Giorgi/DWR
- Blair Greimann/USBR
- John Herrick/South Delta Water Agency (SDWA)
- Jobaid Kabir/USBR
- Lindsay Kammeier/SWRCB
- Elizabeth Kiteck/USBR
- Stephen Louie/SWRCB
- Amanda Maguire/DWR
- Maureen Martin/Contra Costa Water District (CCWD)
- Jacob McQuirk/DWR O&M
- Prabhjot (Nicky) Sandhu/DWR
- Patrick Scott/DWR
- Thomas Burke/Hydrologic Systems for SDWA
- Karen Tolentino/DWR
- Tom Boardman/Westlands Water District
- Zhenlin Zhang/DWR
- Erika Britney/ICF
- Tiffany Mendoza/ICF

**Action Items**

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- DWR will coordinate with stakeholders, including SDWA and SWRCB, for an in-person meeting to discuss details of the Salinity Point Source and Ion Sampling Study.
- SDWA (John Herrick and Tom Burke) will have a follow-up meeting to develop input related to sampling locations, groundwater sampling, and reach for intensive study.
- DWR (Jared, Ibraheem, and Erika) will work with SDWA (Thomas Burke) to identify a location to conduct an intensive study on salinity sources (groundwater, etc.).

- DWR (Ibraheem, Jared) and Daniel Deeds will get information on the USGS sampling event/plans.

## Meeting Notes

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DWR (Jacob McQuirk) gave opening remarks that he is really hopeful that this process will move smoothly and be productive. Encouraged participants to bring up ideas and provide input. If necessary, topics not covered today will be added to the parking lot for another meeting.

The objective of this meeting was to focus on the salinity point source sampling and increased ion sampling study plan. Jared Frantzich, DWR, presented in detail on the salinity point source and ion sampling study – 1 of 6 technical studies outlined in the Monitoring Special Study (see presentation).

Questions and comments focused on the following:

John Herrick, SDWA

- Concerned that study plan is not making use of existing data/understanding of the South Delta.
- Concern that the Montoya studies were completed without property owner participation and reliability of the data.
- Discussion of the source of salinity – including disagreement that agricultural drainage is the main source, rather than groundwater seeping into the River.
- Sampling plan needs to include point sources from outside the South Delta, not just agriculture sources including inputs from San Joaquin/CVP.
- DWR response: Background information in presentation presented for context, intention is to design a study that collect the data/fills the information gaps that exist.

Multiple Participants: Thomas Burke (Hydrologic Systems for SDWA), Erin Foresman (SWRCB), Maureen Martin (CCWD), Steven Louie (SWRCB)

- Interest in the study starting with description of flows in river and in channels where we may want to sample groundwater flowing into the river (Tom Paine Slough, Paradise Cut, etc.). Include analysis to distinguish source of salts via more targeted sampling.
- Broad agreement from multiple participants that it would be a mistake not to include flow so that volume mass balance calculations can be made.
  - Looking at ion concentration has to be coupled with flow. Key to measure concentration when there is flow vs. when there isn't – when salt doesn't have time to accumulate in the channel. Insufficient to test the hypothesis without considering flows.

- Need to look at mass balance. May want to look at a study reach – looking at return flows, inflow, outflow, and groundwater (summer/winter).

Erin Foresman, SWRCB

2021 as unique study opportunity

- This year presents a unique opportunity for study; many unusual/special circumstances.
  - Agricultural practices this year are not typical of past years. There is a large amount of land fallowing happening this year and a much-reduced water use. That could be a reason for much better water quality.
  - 90%+ of the water at Vernalis is coming from the Stanislaus River, which has very low EC.
- DWR note: Added sampling wouldn't start until October 2021.
- Daniel Deeds, USBR: USGS is conducting sampling in the next couple weeks.
- Erin: Specific analysis should be done on existing/ongoing sampling to capitalize on the opportunity presented by this year.
- Maureen Martin, CCWD: supported this concept and added that the temporary barrier also changes water flows/salt dynamics.

Ion data resolution/capabilities

- For the mineral ion data, can we distinguish the import of salts from the San Joaquin/upper watershed/local sources?
- DWR: Could look at ion analysis of water at different sources to compare.
- John Herrick: Need to quantify salt input from upper part of the watershed. Can we distinguish salts from upper watershed from return flows of imported water?
- DWR: Could collect sample at Vernalis, too.

Hypothesis Statement – suggestion to call it a “Draft Hypothesis” (multiple participants)

- Need to restate the problem that there are elevated salinity levels in areas of low flow
- Need to understand the level of magnitude to which salinity levels are increased from all sources.
- Consider a hypothesis that the channels in the South Delta are pushing higher salinity into groundwater. To compare sampling.
- Having multiple hypothesis statements could be beneficial.
- Consider adding null zones to the hypothesis.

Daniel Deeds, USBR

- Suggested using strontium, radium and hydrogen (water) isotopes as markers.
- Reference to a Drexler 2014 study in the Central Delta that used isotopes to determine sources of salinity, looking at radon.
- Radon would be expected to be associated with the groundwater.

### Study questions / Planning

- Need to discuss how to frame study questions.
- John Herrick: Task 1 – be careful of drone work. DWR may not be welcome to fly drones over private property and should work with SDWA in advance.
- Tome Burke: Ground water very important in Tom Paine slough and need to identify areas of null flows.

### ***Closing & Next Steps***

Meeting notes and presentation will be distributed. Erika asked participants to consider specific suggestions on the study as you are reviewing the slides or notes, and to provide those thoughts before/when we next group together.